# Enhancement of the Urban Streets to the Walkable Neighborhood Planning

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**Abstract:-** The concept of urban streets emerges as a fundamental thread, weaving through the fabric of neighborhoods and shaping daily routines. This research embarks on a journey to dissect the essence of approachable neighborhoods, delving into the intricate interplay between space and human needs within the urban landscape. By scrutinizing various cities, this study seeks to unravel the genesis of street-related issues, deciphering how the built environment influences daily activities and user perceptions. Drawing insights from a myriad of literature and case studies, the research delineates a multifaceted portrayal of neighborhoods, emphasizing parameters such as utility, safety, comfort, and allure. Ultimately, this thesis unveils the dynamic relationship between users and streets, advocating for the cultivation of user-friendly cities that cater to the diverse needs of their inhabitants.

**Keywords:-** *User Friendly City, Safe, Useful, Green, Accessible, Inclusive, Built Environment Community, Pedestrians, Streets, Urban Design, Vendors.*

## I. INTRODUCTION

The concept of Urban Streets is an important functional element of planning of a neighborhood. This research aims to study an approachable "neighborhood", with a significant aspect for shaping the daily routing considering the walkable space and to understand the needs of people on the streets. Exploring the different cites as an approach in building the neighborhood the aim of the research follows around the questions, what led to the issues of street. Further exploring the literature and case studies which led to describe the neighborhood in different parameters that are useful, safe, comfortable and active which can make the city user friendly. This research discusses that the interrelation between users and the street varying the needs of the peoples which leads to the creation of user-friendly Cities. Broadly focusing on the user, they are majorly found in the public open spaces i.e. at markets, parks and streets. These kinds of public open spaces should have consideration of user activities. Which lead to state the research questions:

**R1. What type of consideration can be done for making Street user friendly?**

**R2. How does climate effect can be considered while enhancement of the urban street?**

These question lead to the hypothesis that -

**H1. The integration of user-friendly streets is indispensable to climatic considerations, presenting a vital connection between urban planning and environmental resilience.**

## II. LITERATURE REVIEW

In this chapter, I examine the culture of Indian streets to provide a contrast to the different climatic zone of India. It is important that explorations of the street should not blunder into the different zones of so many social and cultural theories, which are universally applicable. this research aim is to highlight the increasingly regulated qualities of streets life by examining the rich diversity of social activity in Indian streets.

**R1. What type of consideration can be done for making Street user friendly?**

### A. Different Users on Same Lane

Since diverse groups of users use the same Indian route, mixed-use roadways pose a severe problem. The route is shared by cyclists, pedestrians, lorries, two-wheelers, tractors, and animal-drawn carts in addition to high-speed vehicles. This leads to an increase in traffic time, congestion, pollution, and accidents on the roads. To sustain traffic and lessen congestion, multiple lanes must be made available for different users. Reconciling the opposing movements of vehicles and pedestrians is difficult. When everyone is free to do their own thing while still using the common area, that is an excellent public space. Different lanes for various users will be created via pedestrianized perpendicular roadways, improving user flow. Widening streets even is a superior idea.

### B. Road Safety

Few people pay any attention to road safety, and breaking the law is common. Wide roadways without any surrounding amenities are less safe than bustling streets. People feel unsafe on these dark, unlit roadways because of

the presence of dark nodes. These streets are devoid of places for interaction and grow boring in the evenings. If the street is divided into distinct lanes, fast moving vehicles won't cause accidents.

### C. The High Number of Cars on Streets

There isn't sufficient space for bicycles or pedestrians in cities because they are built for cars. In order to widen the road and facilitate easy traffic flow, the development authorities have recently begun to remove the plinth, pedestrian paths, ramps, and green pockets. Nowadays, places intended for social interaction are often meant for car commutes. Parking on the street is a typical sight in all Indian cities. There is nowhere for people to walk or socialize since cars are parked parallel to one another along the streets. Any urban environment that is designed should prioritize parking on stilts and basements. It allows the car to park in the appropriate area without obstructing the view of the roadway.

### D. Vendors Struggle for Space in Streets

Setting up shop next to a road is prohibited for sellers. The idea of bustling streets can be improved by giving sellers areas at the side of the road. There are bustling streets with residential apartments on the upper Storeys and shops on the bottom floor. This type of mixed-use living makes streets more useful. Even at night, the street appears safer because to the windows that open outside and provide a full view of it. The area is bustling all day and even at night because of the marketplaces that line the streets.

### R2. How does climate effect can be considered while enhancement of the urban street?

Climate: There are 5 different CLIMATIC ZONES IN INDIA·

- Hot and dry – Experience maximum temp of 41 Degree i.e., Jaisalmer
- Warm & humid climate – Experience maximum temp of 31 Degree i.e., Mumbai
- Composite Climate – Experience maximum temp of 38.5 Degree i.e., Delhi
- Cold climate – Experience maximum temp of 18.5 Degree i.e., Leh
- Moderate climate – Experience maximum temp of 24.3 Degree i.e., Bangalore

The main factors that influence thermal comfort of any user is through heat gain and loss, namely metabolic rate, clothing insulation, air temperature, mean radiant temperature, air speed and relative humidity. A comfortable environment is achieved at temperatures of 22-27 degree centigrade.

This research aims to study the Warm and Humid zone where the temperature ranges up to 31 Degrees. In India most of the people use the green net for balcony, commercial greenhouse, and for the residential terraces. Tight placement will make it more robust to face storms hail in adverse weather

conditions and remain sturdy throughout the season. An excellent quality product can last up to 5 - 7 years if given proper care and installation. They effectively control suitable light, humidity, and temperature. UV protection ranges from 50% to 90%, but the most common green net shade used in homes provides 75% protection against harmful rays. Density of green net provide different temperature control as follows:

| available colours/ coatings | UV properties | cooling/shading | cost |
| --- | --- | --- | --- |
| beige | medium | good: medium reflection and opacity | medium: not readily available |
| black | very good: both UV protection and lifetime | good: very high opacity content, but very low reflection | low: very common, low weight for given shade factor |
| dark blue | good | medium: high opacity, but poor reflection | medium: not readily available |
| dark green | good | medium: as dark blue | low: very common |
| light green | medium | medium: some reflection, medium opacity | low: readily available |
| red | medium (will fade in time) | medium: as light green | medium: not readily available |
| silver (aluminised) | very good | very good: very high opacity, very good reflection | high: coating adds to cost |
| white | very poor: (short lifetime, little protection) | good: low opacity but good reflection | low: readily available |

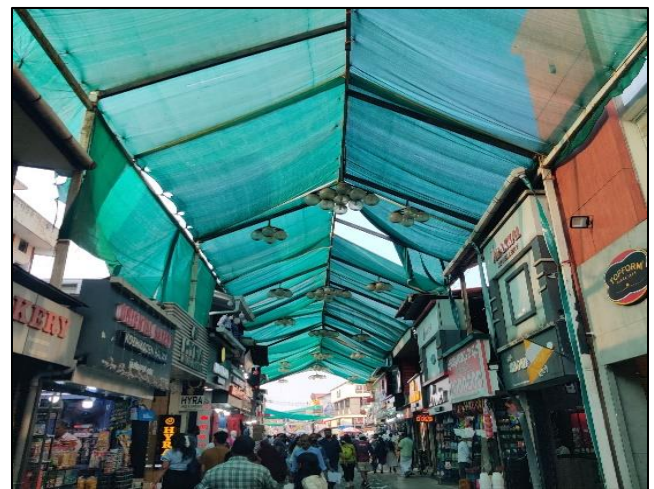Fig 1: Chart Explaining the Typology of Net (source: Author)



Fig 2: Street of Kerela (Source: Author)

The percentage of visible light prevented from passing through the net (e.g. 60% shade factor allows 40% of the visible light through). Same is demonstrated in Kerala. The temperature measured on the street without green net is measured as 31 Degree whereas temperature within the shade of green net is measured as 27 degrees. Thus, a small initiative can make a lively difference on the busiest walkable street.

## III. CONCLUSION

In the realm of urban context, user-friendly streets stand as pivotal components for fostering vibrant and inclusive cities. This research discusses upon diverse urban landscapes and climates, unveiling the dynamics that shape street experiences and neighborhood vitality. Addressing the challenges confronting streets, from accommodating diverse users to enhancing safety and reclaiming public spaces, underscores the need for holistic interventions. Integrating climatic considerations into street design emerges as vital for enhancing urban comfort and sustainability, with innovative solutions like green net shading offering promising avenues. Analyzing for a paradigm shift in urban planning, this research emphasizes the importance of prioritizing the needs and experiences of street users. By embracing user-centric approaches and innovative solutions, cities can chart a path towards a more inclusive, livable future for all inhabitants.

## REFERENCES

[1]. 880 Cites. (2019, 11 26). *880cities.* Retrieved from 880cities: https://www.880cities.org/portfolio_page/my-city-too

[2]. Bernardvanleer Foundation. (2021). *Urban 95.* Retrieved from Bernardvanleer Foundation: https://bernardvanleer.org/app/uploads/2021/12/Brochure-BvLF-2021_WEB.pdf

[3]. Bernardvanleer Foundation. (n.d.). *Bernardvanleer Foundation*. Retrieved from Bernardvanleer Foundation: https://bernardvanleer.org/solutions/urban95/

[4]. Biddulph, M. (2012). The Problem with Thinking about or for Urban design. *Journal of Urban Design, Vol. 17*, 1-20.

[5]. Burton, E., & Mitchell, L. (2006). *Inclusive Urban Design , Street of life.* Architectural Press Elsevier.

[6]. Cities for Play. (2018). *Where do the Children Play?* Retrieved from Cities for Play: https://www.citiesforplay.com/where-do-the-children-play

[7]. Convention on the Rights of the Child. (1990, 09 02). *Convention on the Rights of the Child*.

[8]. Crime Prevention through Environmental Design (CPTED). (2001, 01 01). *Safer Spaces.* Retrieved from Safer Spaces: https://www.saferspaces.org.za/resources/entry/designing-safer-places-a-manual-for-crime-prevention-through-planning

[9]. Gehl, J. (2011). *LIFE BETWEEN BUILDINGS.* Island Press.

[10]. Gerben Helleman . (2021, 06 13). *Designing-child-friendly-street*. Retrieved from Designing-child-friendly-street: https://urbanspringtime.blogspot.com/2021/06/designing-child-friendly-streets.html

[11]. Jacobs, J. (1961). *The Death and and life of Great American Cities.* NewYork: Random House.

[12]. Luka, N., Tak, R., Samios, A., & Adriazola-Steil , C. (2020, 09 10). *What Makes a Child-Friendly City? Redesigning Safer and Healthier Urban Spaces for Young People.* Retrieved from The City Fix: https://thecityfix.com/blog/what-makes-a-child-friendly-city-redesigning-safer-and-healthier-urban-spaces-for-young-people-nikita-luke-rohit-tak-ariadne-samios-claudia-adriazola-steil/

[13]. Luke, N., & EL-Samra, S. (2021, 05 18). *The City Fix*. Retrieved from The City Fix: https://thecityfix.com/blog/low-speed-zones-save-lives-how-do-you-design-an-effective-one/

[14]. National institute of Urban Affairs. (2018, 12 01). *NIUA*. Retrieved from NIUA: https://smartnet.niua.org/sites/default/files/resources/cfn_-_design_guidelines.pdf

[15]. SITZOGLOU, M. (2014). Transforming Streets. A Child's Perspective. [An Urban Design Guidebook for child friendly streets]. In M. SITZOGLOU, *Transforming Streets. A Child's Perspective.* . https://issuu.com/.

[16]. Spaces, R. t. (2022). Reclaming the children's Spaces. In A. Agarwal, *Reclaming the children's Spaces.* https://issuu.com/.

[17]. UNICEF. (n.d.). *UNICEF*. Retrieved from United Nations Children's Fund: https://www.unicef.org/india/

[18]. Urban 95. (2021). *Bernardvanleer Foundation.* Retrieved from Bernardvanleer Foundation: https://bernardvanleer.org/app/uploads/2021/12/Brochure-Urban95-2021_WEB.pdf

[19]. Singh, A., Nayyar, N., & Mourya, A. V. Reclaiming Socially Inclusive Streets. Reclaiming Socially Inclusive Streets 1-12, 1.

[20]. Jennifer Gardner & Sharon Roerty July 24, 2018Planning public spaces to drive Health equity

[21]. (https://meetingoftheminds.org/planning-public- spaces-to-drive health-equity-27760)